

required much grubbing up of tufts of tall grass and shaking out their roots, like digging up miniature potatoes. These are the *Annularia putris* (Gundl.) Pfr. and the *Chondropoma marginalbum* Gundl.) P fr., the latter apparently quite rare. There are no minute things beyond some few *Thysanophora inaguensis* Weinland.

Some days we spent gathering marines on the little pebbly beaches hidden far down under the lofty cliffs that mark this rugged shore line, and we obtained some unusual species washed up from the exceedingly narrow island-shelf; blue water is but a few hundred yards out. Among these are some *Conus cedo-nulli* Lam. Beach collecting is, however, an aggravation; and too much of it becomes a misdemeanor in the collector's ethical code, for it obliges an acceptance of something short of the best.

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#### AMNICOLIDÆ FROM ONEIDA LAKE, N. Y.

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BY HENRY A. PILSBRY.

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The New York College of Forestry, under the direction of Professor Hugh P. Baker, is carrying on a biological survey of Oneida Lake and has issued an interesting bulletin<sup>1</sup> upon the relations of mollusks to fish, by Frank C. Baker. Some *Amnicolidæ* obtained during this work, and subsequent to the preparation of the bulletin were submitted to the writer. The collection proves to be of considerable interest, including some species not before noticed.

#### AMNICOLA BAKERIANA, n. sp.

The shell is umbilicate, turritid-conic, thin, whitish-corneous, somewhat translucent, with unevenly developed striation, dis-

<sup>1</sup>The relations of mollusks to fish in Oneida Lake. By Frank Collins Baker. Technical Publication No. 4, New York State College of Forestry at Syracuse University. Pp. 366. Syracuse, N. Y., 1916. We are informed that it may be obtained free by those interested in the study of Mollusca by applying to the dean of the college, Dr. Hugh P. Baker.

tinct, and close in places, weaker and sparse elsewhere. The summit is decidedly obtuse, as in *A. limosa*, the first whorl being nearly planorboid; subsequent whorls are evenly, strongly convex. The aperture is very shortly ovate, almost round, its length contained almost  $2\frac{1}{2}$  times in that of the shell. Peristome thin, in contrast with the preceding whorl for a short distance.

Length 4.3, diam. 2.7 mm.; 5 whorls (type).

Length 3.75, diam. 2.3, length of aperture 1.35 mm.;  $4\frac{2}{3}$  whorls.

Length 4.1, diam. 2.75, length of aperture 1.65 mm.;  $4\frac{3}{4}$  whorls.

Oneida Lake; off Short Point in  $8\frac{1}{2}$  ft., mud bottom. Lower South Bay, in 18 ft., on mud bottom.

This species resembles *A. limosa* in the conspicuously obtuse apex, but differs by the more elevated, turritid spire and the smaller calibre of the whorls, hence smaller aperture. It is also a weaker shell, with more whorls in specimens of the same length.

There is also an abundant smaller form, resembling the typical form in texture, apex and shape of the whorls, varying in form, but relatively broader than the type. There are some intermediate examples, but as Mr. Baker considers it desirable to have a designation for this form, it may be called *A. bakeriana* form *nimia*. The type measures: length 3, diam. 2.5, length of aperture 1.4 mm.; 4 whorls.

#### AMNICOLA CLARKEI, n. sp.

The shell is narrowly umbilicate, conic, a little obtuse at the apex, corneous, nearly smooth. The whorls are very convex, separated by a deep suture, the last whorl tubular. The aperture is distinctly oblique, almost circular, the upper end rounded, but a trifle more narrowly so than the base. It projects but little beyond the preceding whorl laterally. The peristome is thin, continuous, scarcely or barely in contact with the preceding whorl above.

Length 3.1, diam. 1.9, length aperture 1.1 mm.; 5 whorls (type).

Length 2.8, diam. 1.6, length aperture 0.85 mm.

Operculum having the spiral rather large, the nucleus being above the lower third.

This little species resembles *Lyogyrus* by its tubular whorls of small calibre. The whorls are more convex and increase less rapidly than in *Amnicola walkeriana*, which is also less slender. *A. schrockingeri* Fld. has less deeply convex whorls, and the apex is more acute. *A. bakeriana* is much larger, with a more obtuse apex.

Found in Short Point Bay, Oneida Lake, near shore, in 3 feet of water, bottom of sand with algae; also in Lower South Bay, etc. Collected by Mr. F. C. Baker.

It is named for Dr. John M. Clarke, the distinguished Director of the Museum of the State of New York.

*AMNICOLA ONEIDA*, n. sp.

The shell is typically more slender than *A. lustrica*, turritid-conic, narrowly umbilicate, corneous, minutely striate. The apex is slightly obtuse, but the first whorl projects visibly, as in *lustrica*, whorls *very convex*, parted by a *deep suture*. The aperture is ovate, small, its length contained more than 3 times in that of the shell; upper extremity narrowly rounded. The peristome is continuous, thin, very briefly in contact with the preceding whorl above.

Length 4, diam. 2, length of aperture 1.25 mm.; 6 whorls.

Lower South Bay, Oneida Lake, N. Y., collected by F. C. Baker, 1916.

This species is typically narrower than *A. lustrica* Pils., with a smaller aperture and shorter whorls; but it is chiefly distinguished by the more convex whorls (deeper suture), and the rounded instead of angular posterior end of the aperture. In *Paludestrina nickliniana* the last whorl is much longer. Possibly it may be a subspecies of *lustrica*, yet it has so distinct an appearance that a special name seems desirable. There are also wider examples, which still differ from *lustrica* by the deeper suture and aperture.